

WHAT IS CLAIMED AS NEW AND DESIRED TO BE SECURED BY LETTERS  
PATENT OF THE UNITED STATES IS:

1. A multilayer plastic composite, comprising a sequence  
of layers of at least two incompatible thermoplastic plastics,  
5 A and B, wherein:

said sequence of layers alternates between A and B; a  
layer of plastic B is discontinuous at regular intervals  
to form gaps in said layer of B; and said gaps in said B  
layer of B are filled in with plastic A.

10 2. The multilayer plastic composite of Claim 1, wherein  
said layer of plastic B is inserted as unidirectional columns  
in said plastic A.

15 3. The multilayer plastic composite of Claim 1, wherein  
said plastic B has a greater coefficient of thermal expansion  
than said plastic A.

4. The multilayer plastic composite of Claim 1, wherein  
said plastic A is amorphous, and said plastic B is amorphous,  
semi-crystalline, or crystalline.

20 5. The multilayer plastic composite of Claim 1, wherein  
said layer of B comprises segments and the cross-sectional  
width of said segments of said layer of plastic B vary  
periodically.

25 6. A method for producing a multilayer plastic composite  
comprising a sequence of layers of at least two incompatible  
thermoplastic plastics, A and B, wherein said sequence of  
layers alternates between A and B, a layer of plastic B is

discontinuous at regular intervals to form gaps in said layer of plastic B, and said gaps in said layer of B are filled in with plastic A, said method comprising coextruding plastic A and plastic B through a die comprising a pair of parallel exit  
5 slits and a plurality of exit ports located between said pair of parallel exit slits, said plurality of exit ports being evenly spaced along a line parallel to said pair of exit slits, such that plastic A is extruded through said pair of parallel exit slits and said plastic B is extruded through  
10 said plurality of exit ports.

7. The method of Claim 6, wherein said plastic B has a greater coefficient of thermal expansion than said plastic A.

8. The method of Claim 6, wherein said plastic A is amorphous, and said plastic B is amorphous, semi-crystalline,  
15 or crystalline.

9. An extrusion die, comprising a pair of parallel exit slits and a plurality of exit ports located between said pair of parallel exit slits and evenly spaced along a line parallel to said pair of parallel exit slits.